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XXIV.—*Notes on the Synonymy of some Species of Scolopendridæ, with Descriptions of new Genera and Species of the Group.* By R. I. POCKOCK, of the British Museum (Natural History).

[Concluded from p. 68.]

[Plate V.]

ARTHORRHABDUS, gen. nov.

(ἄρθρον, a joint, and ῥάβδος, a staff.)

*Head-plate* entire, without sulci, not covered posteriorly by the first dorsal plate, but separated from it mesially by a space occupied by a horny membrane, which is united to the first tergite and appears to represent the basal plate.

*Eyes*, *mouth-parts*, and *stigmata* as in *Cormocephalus*.

*Anal somite* resembling that of *Cupipes*, the pleuræ being truncate, the legs stout, and the claw long and serrate.

Other characters, which may or may not prove to be of

generic value, will be found in the description of the single species of which the genus is composed.

This genus is evidently related to *Scolopendra*, *Cormocephalus*, and *Cupipes*. From all, however, it may be recognized by the structure of the head and its relations with the first tergite. It further differs from *Cupipes* in the structure of its stigmata, and from *Cormocephalus* in the arrangement of the spines on the anal femora and in the size of the claw of the anal leg. In the structure of its head and first tergite it comes near *Asanada*; but this last genus may be at once detected by its smooth and almost covered anal pleuræ.

*Arthrorhabdus formosus*, sp. n. (Pl. V. figs. 1-1 d.)

Body robust and parallel-sided.

Colour olivaceous, sometimes rufescent posteriorly; antennæ deep blue-green.

Head-plate punctured, not sulcate either longitudinally or transversely.

Antennæ short, attenuate, composed of seventeen segments, whereof the basal five are bare and the rest pubescent.

Maxillary sternite feebly sulcate anteriorly, punctured, the prosternal plates longer than wide, wider distally than proximally, each bearing four distinct teeth, of which the external one is more distinct than the three internal ones; basal tooth long, sharp, subdentate, on a level with the prosternal plates.

Tergites.—The first not overlapping the head-plate (the basal plate being visible), not sulcate, the second feebly sulcate, the third to the twentieth strongly bisulcate, all with simple margins, the twentieth only showing faint signs of having raised margins.

Sternites bisulcate, with a median abbreviated impression.

Anal somite.—Tergite with a faint median sulcus and raised lateral margins; pleuræ narrow, closely porous, the process very small, conical, and tipped with two minute spines; sternite longer than wide, nearly parallel-sided, with rounded posterior angles; legs short and stout; femur flat internally, with one strong spine on its upper inner edge, two on its under inner edge, one on the postero-inferior edge of the inner surface, and sometimes one or two minute spines on the inferior surface, the process is large, conical, and tipped with two spines; first tarsal segment anteriorly excavated beneath; the claw long, longer than the first tarsal segment, strong, carinate and serrate beneath, not spurred.

Legs terminated by strong and strongly bicalcarate claws, the proximal tarsal segment of all (except of the twentieth

pair) furnished with an infero-anterior spine; in the first pair of legs there is an additional spine above the normal one; proximal tarsal segment longer than the distal.

*Stigmata* elongate, as in *Cormocephalus*.

Length up to 50 millim.

Locality Port Elizabeth (South Africa); a number of specimens collected by Mr. H. A. Spencer, one sent to the Museum by Mr. J. M. Leslie; and also one ticketed merely "S. Africa," from the collection of Dr. Quain.

### PITHOPUS, nom. nov.

(πίθος, a cask or jar, and ποῦς, foot; so called from the shape of the segments of the anal legs.)

*Rhoda*, Meinert, Trans. Am. Phil. Soc. 1886, p. 188, nom. præocc.  
(*Rhode*, Simon, Arachnida, 1882; *Rhodea*, Adams, Mollusca, 1857.)

In its truncate anal pleuræ, thick anal legs, and strong serrate claw with which these limbs are armed, this genus resembles *Cupipes*. It differs, however, from *Cupipes* in its large elongate stigmata. Moreover, it may be recognized from all the genera of Scolopendridæ, which have the tarso-metatarsus composed of two segments, in that the proximal segment is shorter than the distal. In this respect the genus appears to me to approach *Theatops*.

*Pithopus inermis*, sp. n. (Pl. V. figs. 2-2 d.)

Body slender and almost parallel-sided.

*Colour* ochraceous, anteriorly and posteriorly more or less rufous, shining.

*Head-plate* convex, punctured, with a posterior transverse arched sulcus and a median longitudinal sulcus in its hinder half.

*Antennæ* attenuate, moderately long, composed of eighteen segments, whereof the basal six are bare and the rest pubescent.

*Maxillary sternite* punctured, marked in front with a transverse irregularly branched sulcus, from the middle point of which there runs forward a median sulcus, which soon bifurcates and meets on each side the sulcus marking the prosternal plate; prosternal plates in contact, quadrate, longer than wide, each bearing three teeth, whereof the external is separate and distinct and the two internal fused and indistinct; basal tooth well developed, on a level with the prosternal plates, subdentate.

*Tergites*.—The first not sulcate, the second with two feeble

sulci, the rest (except the anal) strongly bisulcate; all of them (except the anal) immarginate.

*Sternites* strongly bisulcate.

*Anal somite*.—*Tergite* with raised lateral margins and a median sulcus; *pleuræ* narrow, densely porous, without a process, with a single small spine in the position of the process; *sternite* nearly oblong, longer than wide, with rounded lateral angles; *legs* stout, short; femur convex externally, flattened internally, the process long, conical, and armed with two spines, the upper inner edge furnished with one or two strong spines, the inner surface with from seven to nine smaller spines, of which two are on the posterior margin and the rest irregularly scattered, and the under inner edge with two stronger spines; patella flattened internally with a smooth prominence on its under inner edge; first tarsal segment anteriorly excavated beneath; claw long, finely keeled and anteriorly serrate beneath, without spurs.

*Legs* with strong and strongly bicalcarate claws and unarmed tarsi; proximal tarsal segment shorter than the distal.

*Stigmata* long and slit-like, especially in the anterior part of the body.

Length (of largest specimen) 80 millim.; width of head 4 millim., of maxillary sternite 5, of anal tergite 4.5.

Two specimens (one measuring 60 millim. long) from Iguarassu (Brazil), collected by Mr. H. N. Ridley and Mr. G. A. Ramage.

*Pithopus calcaratus*, sp. n. (Pl. V. fig. 2 c.)

Body slender, almost parallel-sided, slightly wider at the posterior end.

*Colour* wholly ochraceous, shining.

*Head-plate* punctured, with a complete median longitudinal sulcus and a posterior arched transverse sulcus.

*Antennæ* of moderate length, very thick at the base, attenuate, composed of nineteen segments, whereof the basal six are bare and the rest pubescent.

*Maxillary sternite* punctured, sulcate in front, as in the case of *P. inermis*; prosternal plates long, almost in contact, each bearing three indistinctly defined blunt teeth; basal tooth long, on a level with the prosternal plates.

*Tergites*.—The first overlapping the head-plate, not sulcate; from the second to the twentieth strongly bisulcate, with a faint longitudinal impression between the sulci, and at each of the anterior angles there is a short oblique sulcus; all (except the twenty-first) with simple unraised margins.



*Sternites* smooth, strongly bisulcate.

*Anal somite*.—*Tergite* with strongly raised margins and a median longitudinal sulcus; *pleuræ* densely porous, narrow, truncate, with one small spine in the middle of the posterior border and one small one in the position of the process; *sternite* much longer than wide, nearly parallel-sided, with obtusely rounded posterior angles; *legs* short and thick; femur with a strongly developed bifid process, with two strong spines on its upper inner edge, two smaller ones on its inner posterior edge, three (two large and one small) on its under inner edge, and about six on its inner surface; patella flattened on its inner surface, with an inferior posterior smooth prominence; the other segments cylindrical throughout; claw strong but not carinate beneath.

*Legs* with strong and strongly bicalcarate claws, the first tarsal segment of all—with the exception of the first (? of the second and third) and the twentieth—armed with a spur.

Length about 50 millim.; width of head 2.5, of anal tergite 3.3.

A single specimen from Bahia (*H.M.S. 'Challenger'*).

In most of its features this species closely resembles the preceding. It differs, however, in having the proximal tarsal segment of its legs armed beneath with a spur.

The diagnosis of *P. Thayeri*, Meinert (sub *Rhoda*), is too brief for the satisfactory determination of the species. Consequently either of the two here described may prove to be synonymous with it. Dr. Meinert, however, says that there are only two spines on the inner surface of the femur of the anal leg, whereas in both of these forms there are from seven to nine spines in this position. Dr. Meinert makes no mention either of the spine-armature of the walking-legs or of the presence or absence of sulci on the head and first tergite. Another peculiarity of these two species is the large size of the prescutal pieces of the tergites, especially in the hinder half of the body.

It is interesting to note the close similarity that exists between the description of *P. calcaratus* and that of *Scolopendropsis bahiensis* of Brandt, given by Gervais in vol. iv. of the 'Insectes Aptères.' In fact, were it not for Gervais's statement that *Scolopendropsis* possesses twenty-three pairs of legs, I should have thought that the two descriptions applied to the same species.

#### PSEUDOCRYPTOPS, gen. nov.

*Head-plate* about as wide as long, narrowed anteriorly, not

sulcate, covered posteriorly by the first dorsal plate, and covering the maxillary feet.

*Antennæ* very short and exceedingly stout at the base. Two distinct *eyes* on each side and two much less distinctly defined ones beneath them on the deflexed margin of the head-plate.

*Basal plate* invisible.

*Second tergite* as long as the first.

*Stigmata* conspicuous, elongate; nine pairs, the seventh somite devoid of them.

*Tarso-metatarsus* of all the legs bisegmented, the distal segment much shorter than the proximal.

*Anal somite* small; the *pleuræ* almost covered, without spines and without pores; *sternite* exceedingly wide; *legs* not spinous, thick, claw small.

Whether all the characters here given are of generic value can only be decided by the discovery of other species of the genus; moreover, perhaps some of the features described as specific will prove to be of generic importance.

This genus is very peculiar. In the structure of its anal somite it is not distinct from *Asanada*—the two genera in fact may be recognized from all others by possessing exceedingly small, almost covered, truncate, and perfectly smooth anal *pleuræ*. But in the shape of its head, the structure of its antennæ, the degree of development of the ocelli, and the relative sizes of the first and second dorsal plates *Pseudocryptops* stands quite alone.

*Pseudocryptops Walkeri*, sp. n. (Pl. V. figs. 3-3 c.)

*Colour* flavous, head-plate and maxillary feet slightly darker.

*Body* slender, narrower anteriorly.

*Head-plate* covering the maxillary feet laterally and far overlapping them anteriorly.

*Antennæ* in contact in the middle line, very short, being not longer than the head-plate, very stout proximally, their width at the base being equal to about one third of their length, becoming gradually slender towards the apex, composed of seventeen hirsute segments, whereof the distal only is ovate.

*Palpi* of the third pair of gnathites without a claw.

*Maxillary sternite* with a faint median sulcus; prosternal plates distinct, each furnished with three strong conical teeth; the basal tooth long, strong, and distinctly dentate; the fang or claw strong and lightly curved.

*Tergites*.—The first slightly wider than the head, not sul-

cate; the second as wide as the first; from the fourth to the twentieth bisulcate, the sulci, however, on the nineteenth and twentieth being less conspicuous; all the tergites with unraised margins; the tergites lightly wrinkled, about as long as wide, gradually increasing in length and width from the fourth to the nineteenth; the nineteenth is thus the largest of all; prescuta distinct.

*Sternites* smooth, strongly and conspicuously bisulcate.

*Anal somite* much smaller than the nineteenth; *tergite* with strongly raised margins, angularly produced posterior border, not mesially sulcate, posteriorly depressed; *pleuræ* not porous, not spined, almost concealed; *sternite* very wide, as wide as the nineteenth somite, projecting as far posteriorly as the hinder border of the pleuræ, with convex posterior border; *legs* stout, not in contact, the segments subcylindrical and becoming progressively more slender distally; the patella with a deep superior sulcus; the claw not large, inferiorly serrate, not spurred.

*Legs* with unarmed tarsi; claws armed with two spurs.

Length 35 millim., of antennæ  $1\frac{1}{2}$  millim.

A single specimen from Perim Island, in the Red Sea, off the coast of Abyssinia, collected by Mr. J. J. Walker, to whom I have great pleasure in dedicating the species.

#### PARACRYPTOPS, gen. nov.

Closely allied to *Cryptops*, but differing in the following respects:—

*Maxillary sternite* furnished with two distinct, somewhat rounded, prosternal plates.

*Claws* of maxillipedes exceedingly short, so short as to be incapable of meeting in the middle line.

#### *Paracryptops Weberi*, sp. n.

Testaceous, head and anal somite ochraceous. Body more or less hirsute.

Length 14 millim.

*Locality.* Maumerie (Flores). Two specimens collected by Dr. R. Max Weber.

This new species will be fully described and figured in Dr. Max Weber's 'Zool. Ergebnisse einer Reise in Niederländisch Ost-Indien.'

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The accompanying synopsis of the Scolopendridæ will

serve to show how the new genera here characterized stand towards each other and towards those that have been previously made known:—

*a.* Body bearing twenty-three pairs of legs.

*a*<sup>1</sup>. Head furnished with four eyes on each side.

*Scolopendropsis*, Brandt. Type *bahiensis*, Brandt.

*b*<sup>1</sup>. Eyes absent; tarso-metatarsus of most of the legs composed of a single segment; prosternal plates of maxillipeds absent.

*a*<sup>2</sup>. Seventh somite without stigmata.

*Otocryptops*, Haase. Type *rubiginosus* (L. Koch).

*b*<sup>2</sup>. Seventh somite with a pair of stigmata.

*a*<sup>3</sup>. Anal leg armed with a claw and with bisegmented tarso-metatarsus ..... *Scolopocryptops*, Newport. Type *Miersii*, Newport.

*b*<sup>3</sup>. Anal leg without a claw and with multiarticulated tarso-metatarsus ..... *Newportia*, Gervais. Type *longitarsis* (Newport).

*b.* Body bearing twenty-one pairs of legs.

*a*<sup>4</sup>. Eyes absent; tarso-metatarsus of most of the legs composed of a single segment.

*a*<sup>5</sup>. Anal somite small and with slender legs.

*a*<sup>6</sup>. Without prosternal plates; fang of maxillipede long.

*Cryptops*, Leach. Type *hortensis*, Leach.

*b*<sup>6</sup>. With distinct prosternal plates; fang of maxillipede very short .... *Paracryptops*, gen. nov. Type *Weberi*, sp. n.

*b*<sup>5</sup>. Anal somite very large and with thick legs.

*a*<sup>7</sup>. With nineteen pairs of stigmata.

*Plutonium*, Cavanna. Type *Zwierlinii*, Cavanna.

*b*<sup>7</sup>. With nine pairs of stigmata.

*Theatops*, Newport\*. Type *posticus* (Say).

*b*<sup>4</sup>. With four eyes on each side of the head; tarso-metatarsus of all the legs composed of two segments.

*a*<sup>8</sup>. Seventh somite without stigmata.

*a*<sup>9</sup>. Anal legs armed with a claw and with subcylindrical segments.

*a*<sup>10</sup>. Proximal segment of tarso-metatarsus shorter than the distal; stigmata of third somite very long.

*Pithopus* †, nom. nov. Type *Thayeri* (Meinert).

*b*<sup>10</sup>. Proximal segment of tarso-metatarsus longer than the distal.

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\* Syn. *Opisthemega*, Wood.

† Syn. *Rhoda*, Meinert (nom. præocc.).



- a*<sup>11</sup>. Anal pleuræ very small, without pores and without spines.
- a*<sup>12</sup>. Antennæ longer; head not covering the maxillipedes.  
*Asanada*, Meinert. Type *brevicornis*, Mein.
- b*<sup>12</sup>. Antennæ very short; head covering the maxillipedes.  
*Pseudocryptops*, gen. nov. Type *Walkeri*, sp. n.
- b*<sup>11</sup>. Anal pleuræ larger, porous and spined.
- a*<sup>13</sup>. Head not covered posteriorly by the first tergite.
- a*<sup>14</sup>. Basal plate visible between the head and first tergite; claw of anal leg very long.  
*Arthrorhabdus*, gen. nov. Type *formosus*, sp. n.
- b*<sup>14</sup>. Basal plate absent; claw of anal leg small.  
*Scolopendra* \* (Linn.), Leach. Type *gigantea*, Linn.
- b*<sup>13</sup>. Head covered posteriorly by the first tergite.
- a*<sup>15</sup>. Head sulcate; tarsi unspined; basal plate visible.
- a*<sup>16</sup>. Stigmata large, triangular; anal legs thinner and claw smaller.  
*Cormocephalus*, Newport. Type *rubriceps*, Newp.
- b*<sup>16</sup>. Stigmata small; anal legs thicker, claw long.  
*Cupipes*, Kohlrausch. Type *amphieuryx*, Kohl.
- b*<sup>15</sup>. Head not sulcate; basal plate invisible; stigmata ear-shaped.  
*Otostigma*, Porath †. Type *carinatum*, Porath.
- b*<sup>9</sup>. Anal legs not provided with a claw and with the three distal segments enormously widened and leaf-like.  
*Alipes*, Imhoff ‡. Type *multicostis*, Imhoff.
- b*<sup>8</sup>. Seventh somite bearing a pair of stigmata.
- a*<sup>17</sup>. Stigmata small, not sieve-like.

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\* Syn. *Rhombcephalus*, Newport; *Euryolithobius*, Butler.

† Syn. *Branchiotrema*, Kohlrausch.

‡ Syn. *Eucorybas*, Gerstaecker.

- $a^{18}$ . Stigmata of the third somite ear-shaped.  
*Rhysida*, Wood \*. Type *lithobioides*, (Newp.).  
 $b^{18}$ . Stigmata of the third somite sigmoid or S-shaped.  
*Trematoptychus*, Peters †. Type *afer*, Peters.  
 $b^{17}$ . Stigmata very large and sieve-like.  
 $a^{19}$ . Prosternal plates present; legs and pleuræ spined.  
 $a^{20}$ . Prosternal plates small; a distinct basal tooth on the maxillipede.  
*Ethmophorus*, gen. nov. Type *monticola*, sp. n.  
 $b^{20}$ . Prosternal plates very large; no basal tooth on the maxillipede.  
*Heterostoma* ‡, Newport. Type *trigonopoda* (Leach).  
 $b^{19}$ . Prosternal plates wholly absent; pleuræ not spined.  
*Anodontostoma*, Tömösvary §. Type *octosulcatum*, Tömösvary.

Of these genera the following three are known to me only from description:—*Scolopendropsis*, *Plutonium*, and *Anodontostoma*.

## EXPLANATION OF THE PLATES.

### PLATE IV.

- Fig. 1.* *Heterostoma longicauda*, sp. n. Anal somite, external view.  
*Fig. 1 a.* Ditto. Anal femur, upperside.  
*Fig. 1 b.* Ditto. Anal femur, underside.  
*Fig. 2.* *Heterostoma viridipes*, sp. n. Anal somite, external view.  
*Fig. 3.* *Heterostoma rubripes*, var. *grossipes*, nov. Anal somite, from above.  
*Fig. 3 a.* Ditto. Anal femur, from below.  
*Fig. 4.* *Ethmophorus monticola*, gen. et sp. nov. Anal somite, external view.  
*Fig. 4 a.* Ditto. Maxillary sternite and feet.  
*Fig. 5.* *Rhysida longicornis*, sp. n. Anal femur, internal view.  
*Fig. 6.* *Rhysida calcarata*, sp. n. Anal femur, internal view (♂).  
*Fig. 6 a.* Ditto. Ditto (♀).

\* Syn. *Branchiostoma*, Newport (nom. præocc.).

† Syn. *Ptychotrema*, Peters.

‡ Syn. *Dacetum*, Koch.

§ Syn. *Edentistoma*, Tömösvary.

- Fig. 7. *Scolopendra* (?) *cuivis*, sp. n. Nat. size.  
 Fig. 8. *Cormocephalus cupipes*, sp. n. Anal somite, upperside.  
 Fig. 9. *Cormocephalus inermipes*, sp. n. Anal leg, from above.  
 Fig. 9 a. Ditto. Prosternal plates.  
 Fig. 10. *Cormocephalus dentipes*, sp. n. Anal leg, internal view.

## PLATE V.

- Fig. 1. *Arthrorhabdus formosus*, gen. et sp. nov. Head, dorsal view.  
 Fig. 1 a. Ditto. Anal somite, from below.  
 Fig. 1 b. Ditto. Anal somite, from the side.  
 Fig. 1 c. Ditto. Femur of anal leg, from inner side.  
 Fig. 1 d. Ditto. Stigma of third somite.  
 Fig. 2. *Pithopus inermis*, sp. n. Head, dorsal view.  
 Fig. 2 a. Ditto. Anal somite, from below.  
 Fig. 2 b. Ditto. Anal somite from the side.  
 Fig. 2 c. Ditto. Femur of anal leg, from inner side.  
 Fig. 2 d. Ditto. Stigma of third somite.  
 Fig. 2 e. *Pithopus calcaratus*, sp. n. Tarso-metatarsus of twentieth somite.  
 Fig. 3. *Pseudocryptops Walkeri*, gen. et sp. nov. Head, dorsal view.  
 Fig. 3 a. Ditto. Anal somite, from below.  
 Fig. 3 b. Ditto. Anal somite, from the side.  
 Fig. 3 c. Ditto. Stigma of third somite.

## BIBLIOGRAPHICAL NOTICE.

*The Birds of Norfolk.* By HENRY STEVENSON, F.L.S.; continued by THOMAS SOUTHWELL, F.Z.S. 3 vols., 8vo. Norwich and London, 1866-90.

HOWEVER it is to be accounted for, the fact remains that in no county of England has natural history been more assiduously, and therefore more successfully, cultivated than in Norfolk. The assiduity is a point on which we would especially dwell, since we live in days when what passes for work is knocked off as though speed were its only test and the quality of the "output" a matter beneath the notice of the modern biologist. But it has yet to be proved that what is known in another branch of art as "jerry-building" will pay in the end when applied to authorship; and from our own point of view, perhaps rather antiquated, we are inclined to say that it will not. We seem to have heard not so very long ago of a heaven-sent genius, who, having applied himself (except when he was otherwise engaged) for a couple of years to a line of study entirely new to him—it was a portion of the anatomy of a particular class of the animal kingdom—was at the end of that time enabled to set the subject in a wholly different light! That he did so we can readily believe; but we might put beside it the fact that other men, who had received no spiritual commission and were perhaps only plodding slaves of the scalpel, had employed themselves on the same inquiries ten or even twenty times as long, and yet had failed to arrive at conclusions they would feel warranted in laying before the

